

What is claimed is:

1. A method for checking electronic functionality of a data bus between a first electronic module and a second electronic module operatively connected to the first electronic module, said method comprising:
 - conveying to the second electronic module a first bit pattern through the data bus;
 - providing a second bit pattern in the second electronic module based on the first bit pattern as received in the second electronic module, the second bit pattern having a predetermined relationship with the received first bit pattern; and
 - receiving in the first electronic module the second bit pattern from the second electronic module through the data bus.
2. The method of claim 1, further comprising
comparing the received second bit pattern to the first bit pattern for determining a usable bus width of the data bus based on the predetermined relationship.
3. The method of claim 1, wherein the first bit pattern has an alternate pattern of '0' and '1'.
4. The method of claim 1, wherein each bit in the received first bit pattern and the second bit pattern has a value of either '0' or '1', and second bit pattern is complement to the received first bit pattern such that a bit in the second bit pattern has a value different from the value of the corresponding bit in the received first bit pattern.
5. The method of claim 2, wherein the first electronic module has a maximum bus width defined by a predetermined number of bits and the received second bit pattern has a section in which the pattern is complement to the corresponding part of the first bit pattern, said section having a further number of bits smaller than the predetermined number of bits, and wherein said comparing step determines the usable width of the data bus based on the section in the received second bit pattern.
6. The method of claim 1, further comprising:

conveying to the second electronic module a third bit pattern through the data bus, wherein the third bit pattern is complement to the first bit pattern; and

receiving from the second electronic module a fourth bit pattern through the data bus, the fourth bit pattern having the predetermined relationship to the third bit pattern as
5 received in the second electronic module.

7. The method of claim 6, further comprising
comparing the fourth bit pattern as received in the first electronic module to the third bit pattern for determining the usable bus width.

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8. The method of claim 1, wherein the second electronic module comprises a memory card.

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9. The method of claim 8, wherein the first electronic module has a maximum bus width and the memory card has a number of data pins, the number of data pins is equal to the number of bits conveyable on the maximum bus width.

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10. The method of claim 8, wherein the first electronic module has a maximum bus width and the memory card has a number of data pins, the number of data pins is smaller than the number of bits conveyable on the maximum bus width.

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11. The method of claim 8, wherein the first electronic module has a maximum bus width and the memory card has a number of data pins, the number of data pins is greater than the number of bits conveyable on the maximum bus width.

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12. A software program for use in a first electronic module for checking electronic functionality of a data bus between the first electronic module and a second electronic module, said program comprising:

a code for comparing

a first bit pattern provided to the second electronic module through the data bus to

a second bit pattern received through the data bus from the second electronic module, wherein the second bit pattern is provided in response to the

first bit pattern as received in the second electronic module, the second bit pattern having a predetermined relationship to the received first bit pattern.

13. The software program of claim 12, further comprising
5 a further code, based on the predetermined relationship, for determining a usable bus width of the data bus for conveying data between the first electronic module and the second electronic module.
14. The software program of claim 12, wherein the received first bit pattern has an
10 alternate pattern of '0' and '1' and the second bit pattern is complement to the received first bit pattern.
15. The software program of claim 12, further comprising a third code for generating
15 the first bit pattern.
16. The software program of claim 13, wherein the first electronic module has a
maximum bus width defined by a predetermined number of bits, and the received second
bit pattern has a section in which the pattern is complement to the corresponding part of
the first bit pattern, said section having a further number of bits smaller than the
20 predetermined number of bits, and wherein the further code determines the usable width
of the data bus based on the section in the received second bit pattern.
17. The software program of claim 13, wherein the code also compares
25 a third bit pattern provided to the second electronic module through the data bus to
a fourth bit pattern received through the data bus from the second
electronic module, wherein the third bit pattern is complementary to the first bit
pattern and the fourth bit pattern is provided in response to the third bit pattern as
received in the second electronic module, and the fourth bit pattern having the
30 predetermined relationship to the received third bit pattern, so as to allow the
further code to determine the usable bus width of the data bus.

18. A memory unit for use in an electronic device, the electronic device having a host electronic module for processing data and a data bus for operatively connecting the host module to the memory unit, said memory unit comprising:

means for receiving a first bit pattern from the host module through the data bus;

5 and

means, responsive to the received first bit pattern, for providing a second bit pattern on the data bus, wherein the second bit pattern has a predetermined relationship with the received first bit pattern.

10 19. The memory unit of claim 18, wherein the host electronic module is adapted to compare the first bit pattern to the second bit pattern as received in the host module for determining a usable bus width of the data bus based on the predetermined relationship.

20. The memory unit of claim 18, wherein the received first bit pattern has an
15 alternate pattern of '0' and '1' and the second bit pattern is complement to the received first bit pattern.

21. The memory unit of claim 19, wherein the data bus has a maximum bus width and the memory unit has a number of data pins for operatively connecting to the data bus, and
20 wherein the number of data pins is smaller than number of data bits conveyable in the maximum bus width.

22. The memory unit of claim 19, wherein the data bus has a maximum bus width and the memory unit has a number of data pins for operatively connecting to the data bus, and
25 wherein the number of data pins is equal to number of data bits conveyable in the maximum bus width.

23. The memory unit of claim 19, wherein the data bus has a maximum bus width and the memory unit has a number of data pins for operatively connecting to the data bus, and
30 wherein the number of data pins is greater than number of data bits conveyable in the maximum bus width.

24. An electronic device having means to receive a memory unit, comprising:

a data processing unit;
a data bus linking the data processing unit to the memory unit; and
a program for checking electronic functionality of the data bus, the program
comprising:

5 a code for providing a first bit pattern to the memory unit through the data bus.

25. The electronic device of claim 24, wherein the program further comprises
a further code for comparing the first bit pattern with a second bit pattern as
received through the data bus from the memory unit, wherein the second bit pattern is
10 provided in the memory unit in response to the first bit pattern as received in the memory
unit, the second bit pattern having a predetermined relationship to the received first bit
pattern.

26. The electronic device of claim 25, wherein the program further comprises:
15 a third code for determining a usable width of the data bus based on the received
second bit pattern based on the predetermined relationship.

27. The electronic device of claim 24, wherein said program for checking the
electronic functionality of the data bus is carried out at a boot up procedure.

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28. The electronic device of claim 24, comprising a mobile phone.

29. The electronic device of claim 24, wherein said memory unit is disposed in a
further electronic device.

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30. The electronic device of claim 24, wherein the memory unit comprises:
means for receiving the first bit pattern from the data process unit through the data
bus; and

means, responsive to the first bit pattern as received through the data bus, for
30 providing the second bit pattern on the data bus.

31. The electronic device of claim 24, wherein the first bit pattern has an alternate
pattern of '0' and '1'.

32. The electronic device of claim 24, wherein each bit of the received first bit pattern and the second bit patterns has a value of either '0' or '1', and the second bit pattern is complement to the received first bit pattern.

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32. The electronic device of claim 26, wherein the program further comprises
a further code for providing a third bit pattern to the memory unit through the data
bus, wherein the third bit pattern is complement to the first bit pattern, so as to allow the
further code to compare the third bit pattern with a fourth bit pattern received through the
data bus from the memory unit, the fourth bit pattern is provided in response to the third
bit pattern as received in the memory unit and the fourth bit pattern has the predetermined
relationship to the received third bit pattern, and wherein the third code determines the
usable width of the data bus also based on the received fourth bit pattern.

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